WHAT IS CLAIMED IS:

1. A compressor assembly comprising:

a cylinder block, said cylinder block defining a cavity having a first cavity portion and a second cavity portion, said cavity defining a central axis extending through each of said first and second cavity portions, said first and second cavity portions respectively having first and second cavity sidewalls extending substantially parallel to said central axis, a cross section of said first cavity portion oriented perpendicular to said central axis defining a first cross sectional configuration and area and a cross section of said second cavity portion oriented perpendicular to said central axis defining a second cross sectional configuration and area, said second cross sectional area being greater than said first cross sectional area, the entire first cross sectional area of said first cavity portion being in communication with said second cavity portion, and wherein said assembly defines an inlet in communication with said first cavity portion and an outlet in communication with said first cavity portion whereby a compressible fluid enters said first cavity portion through said inlet at a suction pressure and is discharged through said outlet at a discharge pressure; and

a piston at least partially disposed in said cavity wherein said piston reciprocates along said central axis, said piston including a first piston portion and a second piston portion, said first piston portion having a cross sectional configuration and area substantially similar to said first cavity portion configuration and area, said second piston portion having a radially outer surface at least partially engageable with said second cavity sidewall and wherein, during reciprocation of said piston within said cavity, said first piston portion compresses a fluid in said first cavity portion and forces transverse to said central axis are transferable between said radially outer surface of said second piston portion and said second cavity sidewall.

2. The compressor assembly of claim 1 wherein said first and second cavity portions are each substantially cylindrical.

3. The compressor assembly of claim 2 wherein said first and second cavity portions are coaxially disposed.

4. The compressor assembly of claim 1 wherein said assembly defines a first clearance distance between said first piston portion and said first cavity sidewall and a second clearance distance between said second piston portion and said second cavity sidewall with said

piston centered in said cavity, said first clearance distance being greater than said second clearance distance.

5. The compressor assembly of claim 4 further comprising at least one piston ring disposed on said first piston portion wherein said piston ring sealingly engages said first piston portion and said first cavity sidewall.

6. The compressor assembly of claim 1 further comprising:

a crankshaft having a rotational axis disposed substantially perpendicular to said central axis and a journal portion having a journal axis parallel to and spaced from said rotational axis;

a linkage member coupled to said journal portion;

a wrist pin engaging said linkage member and said second piston portion wherein said wrist pin transfers a driving force from said linkage member to said piston.

7. The compressor assembly of claim 6 wherein said second piston portion defines a central void having an opening on an end face of said second piston portion and a transverse void intersecting said central void, said transverse void defining at least one opening in said radially outer surface of said second piston portion, said linkage member extending into said central void and said wrist pin partially disposed within said transverse void.

8. A compressor assembly comprising:

a cylinder block, said cylinder block defining a cavity having a first substantially cylindrical cavity portion and a second substantially cylindrical cavity portion, said first and second cavity portions being coaxially disposed and defining a central axis, said second cavity portion defining a larger diameter than said first cavity portion, said assembly defines an inlet in communication with said first cavity portion and an outlet in communication with said first cavity portion whereby a compressible fluid enters said first cavity portion through said inlet at a suction pressure and is discharged through said outlet at a discharge pressure;

a piston at least partially disposed in said cavity wherein said piston reciprocates along said central axis, said piston including a first piston portion and a second piston portion, said first piston portion defining a cylindrical shape substantially similar to said first cavity portion, said second piston portion having a radially outer surface at least partially engageable with a sidewall of said second cavity portion;

a crankshaft having a rotational axis disposed substantially perpendicular to said central axis;

a linkage assembly drivingly coupling said crankshaft to said piston; and

wherein, during reciprocation of said piston in said cavity, said first piston portion compresses a fluid in said first cavity portion and forces transverse to said central axis are transferable between said radially outer surface of said second piston portion and said sidewall of said second cavity portion.

9. The compressor assembly of claim 8 wherein said crankshaft includes a journal portion defining a journal axis parallel to and spaced from said rotational axis and said linkage assembly comprises a linkage member coupled to said journal portion and a wrist pin engaging said linkage member and said second piston portion wherein said wrist pin transfers a driving force from said linkage member to said piston.

10. The compressor assembly of claim 9 wherein said second piston portion defines a central void having an opening on an end face of said second piston portion and a transverse void intersecting said central void, said transverse void defining at least one opening in said radially outer surface of said second piston portion, said linkage member extending into said central void and said wrist pin partially disposed within said transverse void.

11. The compressor assembly of claim 8 wherein said assembly defines a first clearance distance between said first piston portion and said first cavity portion and a second clearance distance between said second piston portion and said second cavity portion with said piston centered in said cavity, said first clearance distance being greater than said second clearance distance.

12. The compressor assembly of claim 11 further comprising at least one piston ring disposed on said first piston portion wherein said piston ring sealingly engages said first piston portion and a sidewall of said first cavity portion.

13. The compressor assembly of claim 8 further comprising a motor coupled to said crankshaft and a hermetically sealed housing, said motor, crankshaft, piston and cylinder block being disposed within said housing.

14. The compressor assembly of claim 13 wherein said housing defines an interior volume, said motor and cylinder block disposed within said interior volume, said interior volume containing compressible fluid at a suction pressure.

15. The compressor assembly of claim 8 wherein said cylinder block includes a detachable plate defining one end of said first cavity portion, said plate defining said inlet and said outlet.

16. A method of compressing a refrigerant vapor, said method comprising:

providing a cylinder block having a cavity;

providing a piston defining a piston axis, said piston having a first piston portion and a second piston portion wherein a cross section of said first piston portion oriented perpendicular to said piston axis defines a first cross sectional area and a cross section of said second piston portion oriented perpendicular to said piston axis defines a second cross sectional area, said second cross sectional area being greater than said first cross sectional area;

disposing said piston at least partially within said cavity, said first piston portion defining a compression chamber within said cavity;

reciprocating said piston along a central axis of the cavity by drivingly engaging said second piston portion; and

compressing the refrigerant in the compression chamber with said first piston portion as said piston is reciprocated.

17. The method of claim 16 wherein said method further comprises introducing a refrigerant comprising carbon dioxide into said compression chamber and discharging said refrigerant at a supercritical pressure from said compression chamber after compressing the refrigerant with said first piston portion.

18. The method of claim 16 further including the step of maintaining the alignment of said piston during reciprocating movement of said piston by engaging a radially outer surface of said second piston portion with a sidewall of said cavity.

19. The method of claim 16 wherein reciprocating said piston along a central axis of said cavity by drivingly engaging said second piston portion comprises rotating a crankshaft along a rotational axis and coupling said second piston portion to said crankshaft with a linkage assembly.